



Faculty of Computer Science and Information Technology

***PROGRESS REPORT APPLICATION FOR CHILDREN WITH  
SPECIAL NEEDS***

Sim Yee Ming

Bachelor of Computer Science with Honours

(Multimedia Computing)

2020

# **PROGRESS REPORT APPLICATION FOR CHILDREN WITH SPECIAL NEEDS**

**SIM YEE MING**

This project is submitted in partial fulfillment  
of the requirements for the degree of  
Bachelor of Computer Science with Honours  
(Multimedia Computing)

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BERKEPERLUAN KHAS**

**SIM YEE MING**

Projek ini merupakan salah satu keperluan untuk  
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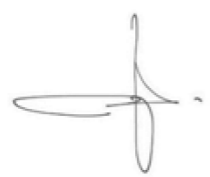
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Permanent Address  
63 LORONG 2C EVERBRIGHT ESTATE  
JALAN BATU KAWA  
93250 KUCHING  
SARAWAK

**Assoc. Prof. Dr Dayang NurFatimah Binti Awang Iskander**  
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## ABSTRACT

*Document management is crucial for a childcare centre to keep the child information record. The current process of information record-keeping is filling paper forms and store it in files with different labelling for easy retrieval. However, more and more problems will arise as the record grows, and it will take more time for record retrieval as there are more labelling inside a file cabinet. The purpose of this project is to develop a Progress Report Application for Children with Special Needs for Pertubuhan PDK Sentuhan Kasih. Currently, the childcare centre does not have a digital application to manage child information. This proposed application provides the childcare centre to store data and provide a platform for the parent to view the child progress report. To achieve the project objectives, Madam Norhayati, one of the members of the EIP team of the Pertubuhan PDK Sentuhan Kasih has explained her needs and demonstrated the management flow of the care centre. The methodology to be used for this project is Rapid Application Development Model. The application is design after analysing three existing application in the market. The applications are Childcare Management Software for Early Education by ECCESoft (Cirrutech, 2014), Daily Connect by Seacloud Software (Seacloud, n.d) and Bloomz by Bloomz (Bloomz, 2017).*

## **ABSTRAK**

Pengurusan dokumen adalah penting untuk pusat penjagaan kanak-kanak untuk menyimpan rekod maklumat kanak-kanak. Proses semasa penyimpanan maklumat dilakukan dengan mengisi borang kertas dan menyimpan dalam fail dengan pelabelan yang berbeza untuk pengambilan mudah. Walau bagaimanapun, semakin banyak masalah akan timbul apabila rekod itu bertambah, dan pencarian rekod akan mengambil lebih banyak masa untuk mendapatkan semula rekod kerana mempunyai lebih banyak pelabelan di dalam kabinet fail. Tujuan projek ini adalah untuk membangunkan Aplikasi Laporan Prestasi Untuk Kanak-Kanak Berkeperluan Khas untuk Pertubuhan PDK Sentuhan Kasih. Pada masa ini, pusat penjagaan kanak-kanak tidak mempunyai aplikasi digital untuk menguruskan maklumat kanak-kanak. Permohonan yang dicadangkan ini membolehkan pusat penjagaan kanak-kanak untuk menyimpan data dan menyediakan platform bagi ibu bapa untuk melihat laporan prestasi kanak-kanak. Untuk mencapai matlamat projek, Puan Norhayati, salah seorang anggota pasukan EIP Pertubuhan PDK Sentuhan Kasih telah menjelaskan keperluannya dan menunjukkan aliran pengurusan pusat jagaan. Metodologi yang digunakan untuk projek ini ialah Model Pembangunan Aplikasi Rapid. Permohonan ini direka bentuk selepas menganalisis tiga aplikasi sedia ada di pasaran. Aplikasi adalah Childcare Management Software for Early Education dari ECCESoft (Cirrutech, 2014), Daily Connect dari Seacloud Software (Seacloud, n.d) dan Bloomz dari Bloomz (Bloomz, 2017).



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## **CHAPTER 1: INTRODUCTION**

### **1.1 Introduction**

Pertubuhan PDK Sentuhan Kasih (formerly known as PDK PIBAKAT 1) is an official registered NGO with the Jabatan Pendaftaran Pertubuhan Malaysia Negeri Sarawak on April 4, 2018 ("PPDK Sentuhan Kasih Kuching", n.d.). This care centre was founded in the late 80s by Margaret Tang (Hung, 2012). Members of the organisation are parents or guardians of children with disabilities around Kuching. The organisation was established as a strategy in community development for rehabilitation, equal opportunity and social integration of people with disabilities. Specifically, the organisation is focused on people with disabilities who need recovery and basic training in terms of movement, speech, special education and basic skills in self-management.

Furthermore, the organisation is an alternative to institutional recovery, which helps people in the community to become independent and adaptable to society. In order to let the public to know the existence of the Pertubuhan PDK Sentuhan Kasih, every year they hold events to gain recognition, supports and assistance from various organisations. The category of disabilities that they are servicing is Autism Spectrum Disorder (ASD), Down Syndrome (DS or DNS), visual impairment, hearing-impaired, Cerebral Palsy (CP), and Attention Deficit Hyperactivity Disorder (ADHD). The child with those disabilities will undergo an early intervention program which involves the gross motor skills, fine motor skills, social development, language development, self-management, pre-write(read, think and paint), creativity(games, recreation and others), vocational training, sports and recreation.

## **1.2 Problem Statement**

The pilot care centre currently using the manual approach, which is paper filling to record and track the conditions and development of each of the members. This approach is ineffective and limits record search and progress monitoring.

## **1.3 Project Objective**

The objective of this project is to develop a Progress Report Application for Children with Special Needs for the staff to record and report the child learning progress.

Other objectives include:

- To study and design a mobile application that able to record and report the progress of the student or child is diagnosed with a disability.
- To develop a mobile application that supports effective record search for member progress.
- To evaluate the usability and effectiveness of using the proposed application against the existing approach.

## **1.4 Brief Methodology**

The methodology to be utilised for this project is Rapid Application Development Model (RAD) (Figure 1.1). Andrew Powell-Morse (2016) stated that RAD describes a method of software development which heavily emphasises rapid prototyping and iterative delivery. This methodology is the contradiction of the waterfall model, which emphasises strict planning and requirements recording. For this reason, the methodology is chosen because of the time limit

and the availability pool user to test the prototype. RAD consists of four main phases, and they are analysis and quick design, prototyping cycle, testing, and implementation.

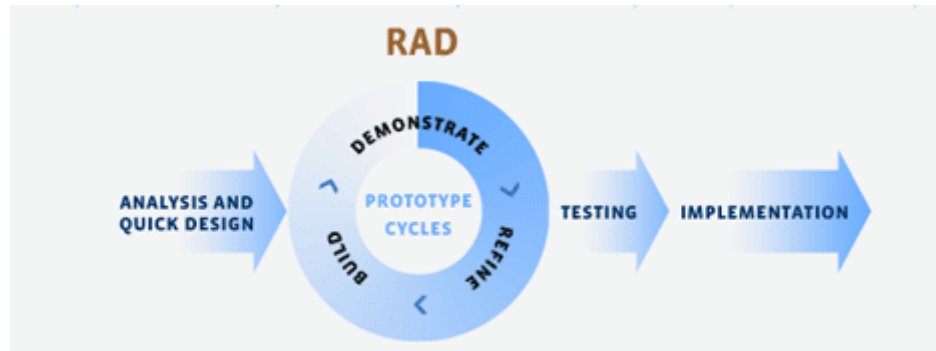


Figure 1.1 Rapid Application Development Model (Ghahrai, 2018)

### 1.4.1 Analysis and Quick Design

In this phase, Pertubuhan PDK Sentuhan Kasih will explain clearly their daily tasks. The explanation begins from new member registration, observe the child behaviour, mentoring them by carrying out activities, record down the status of the child and set the plan for the next visit session. After knowing the requirement, and both users and developers have a mutual understanding of what will be built. Then will conduct further research based on the requirement and compile an estimated project timeline.

### 1.4.2 Prototyping Cycle

## Build

Once the timeline, budget and requirements have been set. The prototype development process will start. The project will build using Java language with the help of Android Studio. Further changes will be done based on the user review.

### **Demonstrate**

After a prototype is complete, it will be shown to the user and note down feedback from user whereby the application needs to improve or remove.

### **Refine**

In this phase, the prototype will be refined based on the feedback from the users to improve or remove certain features.

#### **1.4.3 Testing**

Run testing of the prototype based on a different scenario. There will be multiple user testing before the full release of the prototype. Any errors or bugs detected will be fixed.

#### **1.4.4 Implementation**

The project is closed case once get the user approval and can be used on a real-life example.

### **1.5 Project Scope**

The progress report application is targeted to be used in the pilot care centre, and it will be installed on an Android smartphone. The staff use it to record the child progress, whereby the parent can look for their child learning progress in the application. ADHD is the disability to focus on this project. Several studies of ADHD in childhood report a heavy emotional burden on family (Jepsen & Georgina, 2018). As a result, the parents can look into the historical record

of the proposed project to seek for the solution on what they do when they meet a specific behaviour.

### **1.6 The Significance of Project**

To build a progress report application that will replace the current approach that the care centre is using to reduce the time to consume and offer convenience while look for children information. This project will allow staff to record the student learning progress after every visit on the pilot care centre. Besides, the project can help the user to generate the quarterly, semi-annual report for the educational progress. Moreover, the parents of the children also can view the children education progress, which compares what they do in the class session and the expected behaviour they should do as a reference. There are remark or suggestion from the staff for the parent guideline to educate their children at home. The staff only can assist the child for one and a half hours class session to serve them. Parents still hold the most responsibility to educate them on the rest of the time. Thus, this project plays an important part to provide up-to-date information for the parent.

### **1.7 Expected Outcome**

The outcome of this project is a mobile application that usable and offers convenience for the staff of the pilot care centre. Besides, the users do not need to put more effort like before to do a record search when using this mobile application.

## 1.8 Project Schedule

Gantt Chart is used to display the project schedule

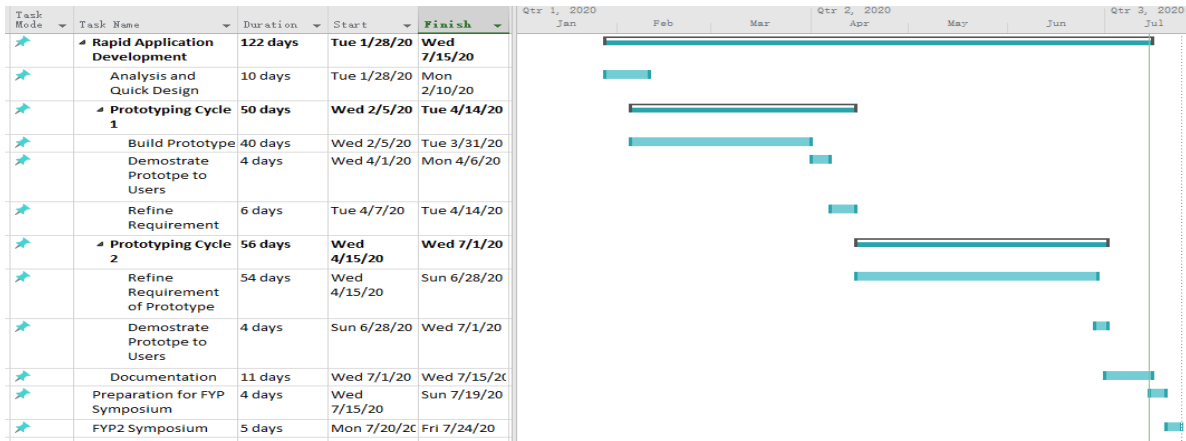
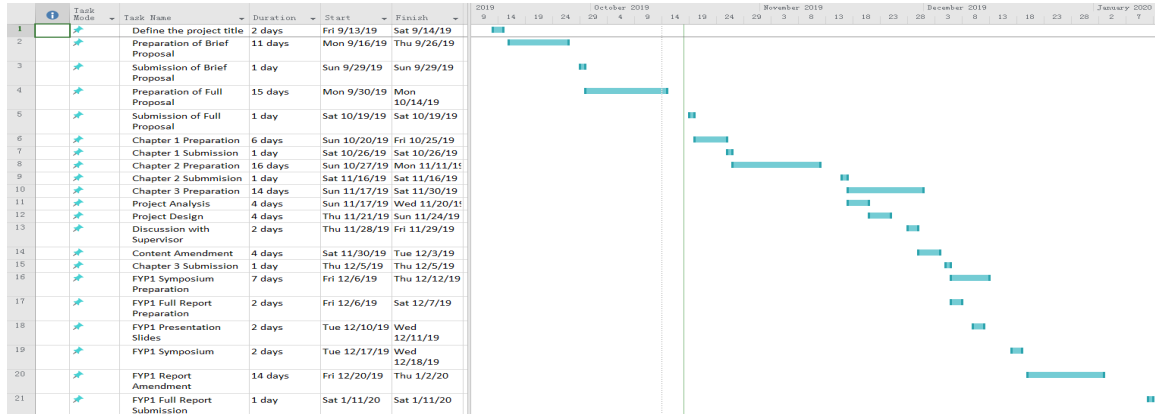


Figure 1.2 Gantt Chart of Project Schedule

## 1.9 Project Report Outline

This report consists of five chapters which are the introduction, literature review, requirement study, analysis and design, implementation and evaluation, and conclusion. Each of the chapters will be described briefly as below:

## **Chapter 1: Introduction**

This chapter covers the overview of the project which comprises of the introduction, problem statements, project objectives, the methodology to be used, project scope, significance of the project, project schedule, and the expected outcome of the project.

## **Chapter 2: Literature Review**

This chapter document the current approaches in Pertubuhan PDK Sentuhan Kasih and some literature review based on the articles and journal which are related to this project. At least three existing systems in the market will be review to get the insight on the advantages and the limitations. The analysed insight will be used for the implementation of the mobile application.

## **Chapter 3: Requirement Study, Analysis and Design**

Chapter 3 describes how the requirements are obtained, identified and analysed will be discussed. Besides, the methodology used throughout the project development will be further explained.

## **Chapter 4: Implementation**

In this chapter will clearly explain the implementation phase made in this project. The prototype of the Progress Report Application for Children with Special Needs will be evaluated by PDK PIBAKAT 1. Changes will be made if needed improvement based on the users. These processes will keep iterating until the mobile application meets the requirement that is accepted by the users.

## Chapter 5: Testing

In this chapter, testing will be carried out to make sure the prototype performed as designed. Each of every section is done developed, and testing is carried out at this session. Also, usability testing will be carried out to measure the effectiveness of using the proposed application.

## Chapter 6: Conclusion and Further Works

This chapter concludes the overall of the project as well as outlines for the extension works.

### 1.10 Summary

This overall project mapping is used to give the illustration of the summarises of the overall of the project from preparation until the project completion.

Problem	Objective	Methods	Outcomes
The pilot care centre is using the manual paper recording to record and track the conditions and development of each of the members	Design To study and design a mobile application that record and report the progress of the student or child is diagnosed with a disability	Literature review - Childcare Management Software for Early Education by ECCESoft - Daily Connect by Seacloud Software - Bloomz by Bloomz	Mobile Application Design